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AUTHOR Panek, Paul; Sterns, Harvey
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ABSTRACT

The literature on self-predictions and self-efficacy suggests that, with age, accuracy is stressed at the expense of speed in performing a psychomotor task. To investigate the relationship between self-rated performance, actual performance, and task preferences as a function of age, 175 females, ranging in age from 17 to 72 years, were placed into one of seven age groups: 17-24 years, 25-32 years, 33-40 years, 41-48 years, 49-56 years, 57-64 years, 65-72 years, and were administered a complex reaction time task. Upon completion of the task participants were administered a semantic differential on which they evaluated themselves and the task. Results indicated that at all age levels individuals were inaccurate in predicting their own performance. Further, individuals tended to evaluate the task on the basis of how well they thought they performed. These findings support the assumptions of self-efficacy theory, rather than the hypothesis that self-predictions increase with advanced age. (Author/BL)

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Relationship Between Actual Performance and Perceived Performance Across the Life Span

Paul Panek
Department of Psychology
Eastern Illinois University
Charleston, Illinois 61920

Harvey Sterns
Department of Psychology
The University of Akron
Akron, Ohio 44325

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Paper presented at the 92nd annual meeting of the American Psychological Association, Toronto.

Abstract

This study integrated the literature on self-prediction of behavior with self-efficacy theory in a life-span framework. One hundred seventy-five females ranging in age from 17 to 72 years, were placed into one of seven age groups: 17-24 years, 25-32 years, 33-40 years, 41-48 years, 49-56 years, 57-64 years, 65-72 years, and were administered a complex reaction time task. Upon completion of the complex reaction time task participants were administered a semantic differential on which they evaluated themselves and the task. Results indicated that at all age levels individuals were inaccurate in predicting their own performance. Further, individuals tended to evaluate the task on the basis of how well they thought they performed. These findings support the assumptions of self-efficacy theory. Implications of results with regard to aging were discussed.

Relationship Between Actual Performance and Perceived Performance Across the Life Span

Recently, there has been increased interest in the accuracy of "self-predictions" by individuals in a variety of situations (Osberg & Shrauger, 1983; Shrauger & Osberg, 1981). For example, Shrauger and Osberg (1981) have demonstrated people's own judgments may often be more predictive of their behavior than more traditional methods of psychological assessment.

Conceptually related to the literature on self-predictions is the work of Bandura (1977, 1981) on "efficacy theory", which deals with individuals self-knowledge on self-perceptions. This theory predicts when an individual encounters a novel situation, especially one that involves major changes in the transaction between the person and the environment, a critical period of self-evaluation begins (Bandura. 1977, 1981; Rebok & Offermann, 1983). That is, in a new situation the individual begins a comparison process of their behavior and performance to both themselves and others. As reported by Rebok and Offermann (1983), Bandura (1977)suggests judgments of personal efficacy, whether accurate or inaccurate, are based on four sources of information: a) performance accomplishments; b) observing the performance of others; c) social influences; and, d) states of physiological arousal.

Though studies of self-prediction and self-efficacy have, for the most part, concentrated in the clinical/counseling area, they hold great promise as an explanatory theory for many behaviors usually associated with older adults in real-world and laboratory situations. For example, Rebok and Offermann (1983) used self-efficacy theory to explain the nature of older adults' behavioral competencies in college and university classrooms.

Generalising from the literature on self-predicitons and self-efficacy theory, it seems logical to predict that with increased age individuals would

become more accurate in self-predictions of behavior due to greater experience, as well as a greater awareness of decreased or changed capacity, ability, and/or performance. This speculative hypothesis would be most evident on a task in which the individual should be accurately aware of decreased performance with age, such as perceptual-motor reaction time.

As reported extensively in the literature (see Botwinick, 1978; Panek, Barrett, Sterns, & Alexander, 1977; Welford, 1962, 1977) there is a general slow-down in speeded performance in a variety of situations and behavior, and from age 40 onward, accuracy was stressed at the expense of speed in performing a psychomotor task. That is, as we age, we should become more aware of our abilities and limitations, and therefore, be more accurate in our prediction of our own performance.

Therefore, the purpose of the present investigation was to test this speculative hypothesis derived from the literature on self-predictions and self-efficacy. Specifically, we plan to: 1) determine if relationship between self-rated performance on a task and preference for the task differs as a function of age; and, 2) investigate the relationship between self-rated performance and actual performance differs as a function of age.

It was hypothesized that if the literature on self-prediction and self-efficacy are appropriate within a life-span framework, the relationship between self-rated performance on a task and preference for the task would be positive and significant at all points along the life-span, and may in fact, increase with advanced age. Second, if individuals are accurate in their assessment in their performance, there should be a positive and significant relationship between self-rated performance, and actual performance on a task. Additionally, this relationship should increase with age since individuals should become more aware of their abilities and limitations.

This would be accomplished by having individuals of different age groups engage in a complex reaction time task, which is known to manifest age differences, and have these individuals rate both their "predictive" performance on the task, and evaluate how much they enjoyed the task.

The participants were 175 community-living females volunteers from a large midwestern metropolitan area, and those previously reported by Panek, Barrett, Sterns, and Alexander (1978) in a life span study of age differences in perceptual style, selective attention, simple choice, and complex reaction time. These participants ranged in age from 17 to 72 years of age, and were placed into one of seven age groups of 25 on the basis of their chronological age as follows: Group 1, age 17-24 years (M age = 21.20, SD = 1.74); Group 2, age 25-32 years (M age = 27.12, SD = 1.92); Group 3, age 33-40 years (M age = 35.32, SD = 2.17); Group 4, age 41-48 years (M age=44.04, SD = 2.88); Group 5, age 49-56 years (M age = 52.24, SD = 2.42); Group 6, age 57-64 years (M age = 59.76, SD = 2.13); Group 7, age 65-72 years (M age = 68.24, SD = 2.57).

All participants were in good or excellent health (self-report); had normal vision (measured by Bausch and Lomb Ortho-Rater); and, had normal hearing ability (measured by Beltone 10D).

For the task, participants were seated in a simulated drivers seat (Modified American Automobile Association Reaction Time with a Hunter 220 Clock Counter) with standard controls. Stimulus material was projected from the rear of the participant onto a screen at the participants' eye level. Response latency was recorded on timers accurate to 1/100 of a second. The stimulus consisted of a photograph of an actual driving scene in which was embedded a signal or sign that the subject respond with either; a turn right; a turn left; a brake response; or horn blow response. For example, one photo contained a stop sign, in which case, the correct response was to depress the brake pedal.

There was only one stimulus in each slide. Each type of stimulus was presented eight times in random order, to which the participant was to respond appropriately. Scores were timed to complete the required response, as previously reported (Panek et al, 1978) there was a significant difference between the age groups, F (1,174) = 5.73, $p < .001$.

Individuals evaluated themselves ("Myself at this task") and the task ("This task") with the semantic differential technique (Osgood, Susi, & Tannenbaum, 1957). Following the completion of the task, the participant was given four (4) bipolar adjectives, measuring the evaluation factor from the semantic differential. There were: good-bad, valuable-worthless, pleasant-unpleasant, fair-unfair. These adjectives were the same for all participants, and scored according to standard procedures.

In order to test the speculative hypothesis derived from self-efficacy theory and the self-prediction literature, correlation-coefficients were computed between the individuals performance on the complex reaction time task and the semantic differential scales for "myself at this task" (self-prediction), and between the semantic differential scales for "myself at this task" and "this task" (self-efficacy).

The correlations regarding the hypothesis derived from the self-prediction

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Insert Table 1 About Here

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literature are presented in Table 1. As can be seen in this table, individuals at all age levels are inaccurate in the prediction of their own performance. Only in the youngest age group did the correlation approach significance ($p < .10$). Therefore, this appears to suggest that individuals are not good judges of their own performance. Also, these results failed to support the hypothesis which suggested that the correlations, i.e., self-predictions, would increase with advanced age.

Concerning self-efficacy theory, the correlations between preference for the task and self-reported performance are presented in Table 2.

Insert Table 2 About Here

As can be seen in this table, in all age groups except for the young-old (Group 6, ages 57-64 years), the correlation between preference for the task and self-perceived ability were positively and significantly correlated. This indicates that individuals evaluate a task on the basis of how well they feel they performed on the task, which supports self-efficacy theory.

Overall, results of the present investigation suggest individuals are not accurate in self-prediction of their performance at any portion of the adult life span, on a perceptual-motor reaction time task. Additionally, results support self-efficacy theory in the sense that individuals feel positive about those tasks they feel they performed well, regardless of how well they actually performed.

The findings of the present investigation have implications for procedures designed for the remediation and training of older adults. Future investigations should attempt to replicate and extend these findings.

TABLE 1
RELATIONSHIP BETWEEN SELF-REPORT ABILITY AND
ACTUAL ABILITY ON THE TASK BY GROUP

Group:	1 (Age 17-24 yrs.)	2 (Age 25-32)	3 (Age 33-40)	4 (Age 41-48)	5 (Age 49-56)	6 (Age 57-64)	7 (Age 65-72)
Complex RT	.34+	.29	-.15	.06	-.13	.09	.03

[1] $\underline{n}$ = 25 for each group

+ $p < .10$

TABLE 2

RELATIONSHIP BETWEEN RATED PREFERENCE FOR THE TASK AND SELF-RATED ABILITY ON THE TASK, BY GROUP

Group:	1 (Age 17-24 yrs.)	2 (Age 25-32)	3 (Age 33-40)	4 (Age 41-48)	5 (Age 49-56)	6 (Age 57-64)	7 (Age 65-72)
Complex RT	.75***	.51**	.75***	.88***	.58**	.23	.81***

[1] $\underline{n}$ = 25 for each group

** $p < .01$

*** $p < .001$

References

Bandura, A. (1977). Self-efficiency: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.

Bandura, A. (1981). Self-referent thought: A developmental analysis of self-efficacy. In J.H. Flavell & L.D. Ross (Eds.), Sound cognitive development: Frontiers and possible futures. Cambridge, England: Cambridge University Press.

Botwinick, J. (1978). Aging and behavior: a comprehensive integration of research findings (2nd ed.). New York: Springer.

Osberg, T.M., & Shrauger, J.S. (1983, August). On decoding cues to the accuracy of self-predictions. Paper presented at the 91st annual meeting of the American Psychological Association, Anaheim, CA.

Osgood, C.E., Susi, G., & Tannenbaum, P. (1957). The measurement of meaning. Urbana: University of Illinois Press.

Panek, P.E., Barrett, G.V., Sterns, H.L. & Alexander, R.A. (1977). A review of age changes in perceptual information processing ability with regard to driving. Experimental Aging Research, 3, 387-449.

Panek, P.E., Barrett, G.V., Sterns, H.L., & Alexander, R.A. (1978). Age differences in perceptual style, selective attention, and perceptual-motor reaction time. Experimental Aging Research, 4, 377-387.

Rebok, G.W., & Offermann, L.R. (1983). Behavioral competencies of older college students: A self-efficacy approach. The Gerontologist, 32, 428-432.

Shauger, J.S., & Osberg, T.M. (1982). Self-awareness: The ability to predict one's future behavior. In G. Underwood (Ed.), Aspects of consciousness (Vol. 3), London: Academic Press.

Welford, A.T. (1962). Changes in the speed of performance with age and their industrial significance. Ergonomics, 5, 139-145.

Welford, A.T. (1977). Motor performance. In J.E. Birren & K.W. Schaie (Eds.), Handbook of the Psychology of Aging. New York: Van Nostrand.